

**DES5402PP-U**

**使用说明书**

## DES5402PP- U

1	100MIPS	TMS320VC5402	16K Words	32K
		64K		
2	TLC320AC01	AIC	A/D D/A 1	14 bit
		25K Sa/s		
3	32K	EPROM	BOOTLOADER	
4	PC	DSP HPI	DSP	
	HPI	BOOTLOADER		
5	I/O		UART	
6			/	
7	DES5402PP-U	1 DSP	McBSP 1	
		DSP		
8				
9	5V -5V 3.3V 1.8V			

## XDS510

	DES5402PP-U	JTAG		
	CCS	XDS510	' C2000	
' C5000 ' C6000 ' VC33	DSP	CCS 2.0	EVM	
	XDS510			

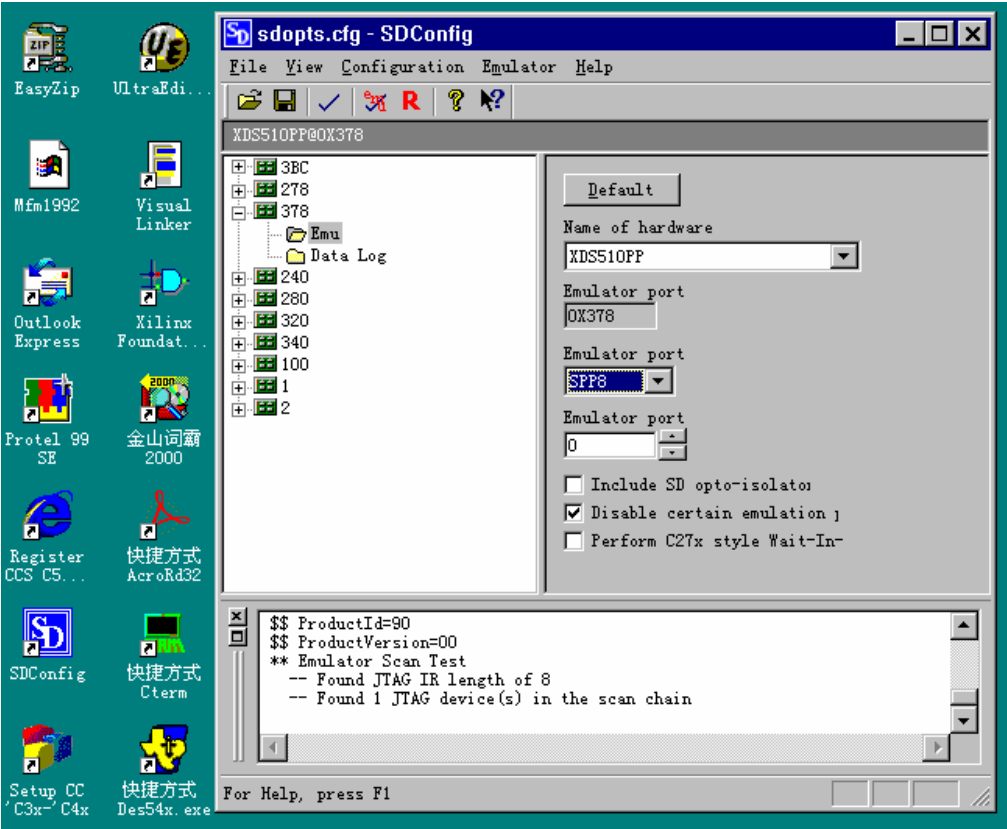
## DES5402PP-U

	DSP			
1		16	4	1
	2	I/O		A/D
	D/A			
2	UART	DSP	PC	
3	PC	PC DSP HPI		

4	DSP	TMS320VC5402	1	McBSP1
	DSP			
5		8		MCU

CCS

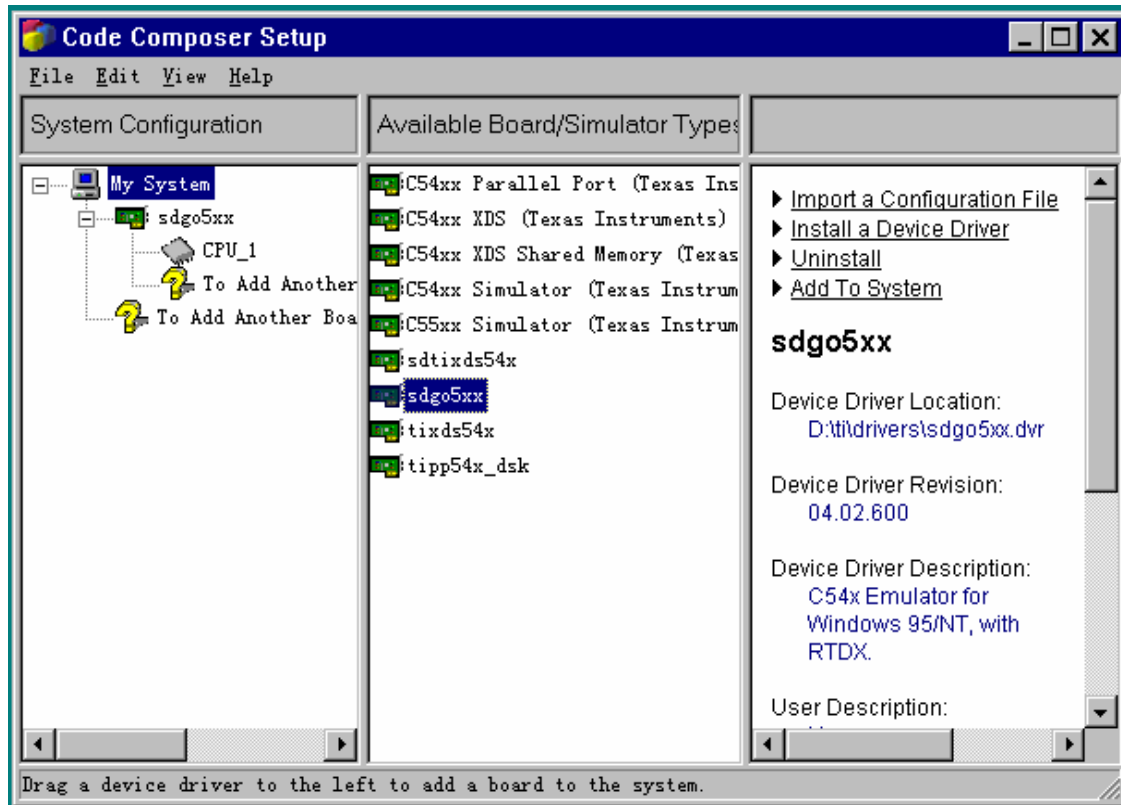
	DSP	TI	CCS	Code Composer Studio	CCS
XDS510					
	CCS				
1	CCS		driver	setupcc54x.exe	
		CCS			
SDConfig					
2		DES5402PP-U	PC		D2
3	SDConfig			2-1	



2-1 CCS

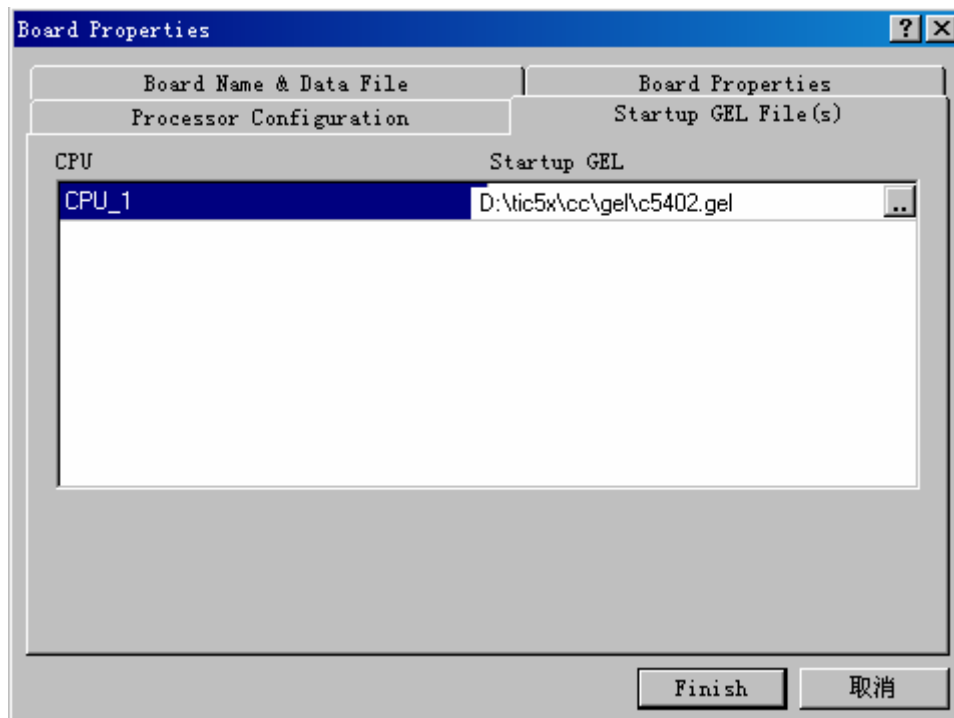
4	Configuration	Ports Available -> Printer	PC
	PC	IO=0x378, EPP	EPP1.7 EPP1.9
5	378	PC	378 Emu
	XDS510PP	Emulator Port	EPP
	PC	SPP8	

6 . Emulator Test  
SDCconfig 1 JTAG  
PC  
7 . SDCconfig CCS setup CCS  
2-2 Install a Device Driver sdgo5xx



2-2 CCS

IO 0x378 " Processor  
Configuration " TM320C5400 CCS  
CCS D1 CCS1.2 CCS GEL  
C54X->C5402\_init CCS CCS2.0 SETUPCCS  
c5402 gel 2-3 CCS CCS



2-3 CCS

8	c5402.gel	CCS	DES5402PP-U	
	GEL	CCS	"GEL files"	c5402.gel

Startup() CCS

/\* The Startup() function is executed when the GEL file is loaded. \*/

Startup()

```
{
    C5402_Init(); /* */
    GEL_TextOut("Gel StartUp Complete.\n");
}
```

I/O

/\* All memory maps are based on the PMST value of 0xFFE0 \*/

hotmenu C5402\_Init()

```
{
    GEL_Reset();
    PMST = PMST_VAL;
```

```

/* don't change the wait states, let the application code handle it */
/* note: at power up all wait states will be the maximum(7) */
/* SWMR = SWMR_VAL; */

BSCR = BSCR_VAL;
C5402_Periph_Reset();
GEL_XMDef(0, 0x1eu, 1, 0x8000u, 0x7fu);
GEL_XMOn();
GEL_MapOn();
GEL_MapReset();

/*-----*/
GEL_MapAdd(0x80u, 0, 0x3F80u, 1, 1); /* DARAM */
GEL_MapAdd(0x4000u, 0, 0xC000u, 1, 1); /* External */
GEL_MapAdd(0x10000u, 0, 0x8000u, 1, 1); /* Extended Addressing - Page 0 */
GEL_MapAdd(0x18000u, 0, 0x8000u, 1, 1); /* Extended Addressing - Page 0 */
GEL_MapAdd(0x28000u, 0, 0x8000u, 1, 1); /* Extended Addressing - Page 0 */
GEL_MapAdd(0x38000u, 0, 0x8000u, 1, 1); /* Extended Addressing - Page 0 */

GEL_MapAdd(0x0u, 1, 0x60u, 1, 1); /* MMRs */
GEL_MapAdd(0x60u, 1, 0x3FA0u, 1, 1); /* DARAM */
GEL_MapAdd(0x4000u, 1, 0xC000u, 1, 1); /* External */

GEL_MapAdd(0x8000u, 2, 0x8000u, 1, 1); /* I O SPACE */
/*-----*/

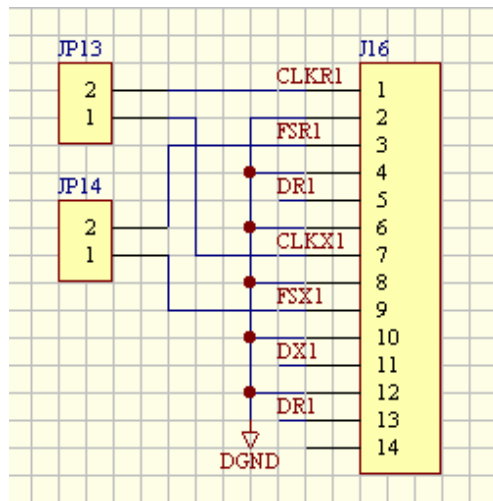
GEL_TextOut("C5402_Init Complete.\n");
}

```

## DES5402PP- U

### 3.1

DES5402PP- U AC01 14bi t A/D D/A 25KHz  
 JP12 AC01  
 CD- ROM PDF AC01 DATASHEET  
 CCS CD- ROM fir5402 des5402pp. out,  
 J3 1KHz Hal t ccs\_show  
 fir 0x1800  
 128 16  
 0x1020 128 16  
 JP12  
 DES5402PP- U MIC J12 SPK J13  
 AC01 J10 LS1  
 JP16 JP12 CD- ROM  
 MIC5402 MIC SPK R50



3-1 McBSPs1

3.2 McBSPs1 J16 3-1  
 VC5402 BCLKR BLOCKX FSR FSX  
 DES5402PP- U JP13 JP14  
 McBSP CD- ROM PDF TMS320C54x



### 3.3 HPI

DES5402PP-U HPI PC PC  
 DSP 16K CD-ROM HPI 5402 5402pp.c  
 DSP HPI BOOTLOADER  
 HPI 5402 EXE, XF 0 1 DSP 0x2000  
 DSP D3 HPI BOOTLOADER JP11  
 JP10 ENABLE HPI JP11 DSP HINT INT2  
 HPI BOOTLOADER DSP HPI CD-ROM PDF  
 TMS320C54x Volume 5 Enhanced Peripherals

### 3.4

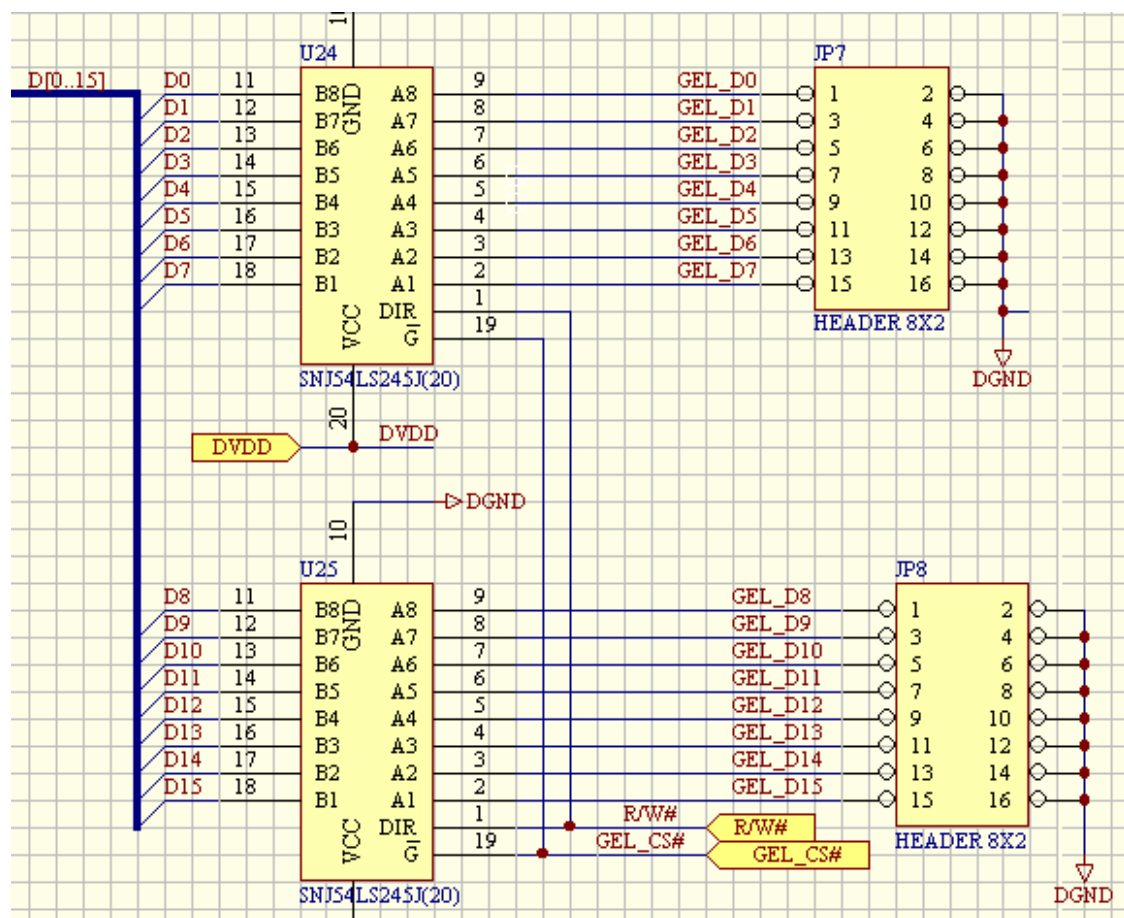
DES5402PP-U DSP 100M 20M X2  
 CCS 0x58 CLKMD 0x1007 PLL x 2  
 PLL x 10 DSP 100M CLKMD  
 CLKMD FIR DSP 100MHz  
 SWSR 0x28 0x0a994 4  
 DSP

### 3.5 XDS510

JP6 PC  
 JP15  
 DES5402PP-U  
 C6711 C6000 C6000 CCS  
 CCS Driver C2000 VC33 C5000 C6000  
 CCS 2

### 3.6

DES5402PP-U DSP A/D  
 D/A FIFO I/O 3-2 3-3  
 16 DO-D15 4 AO-A3 1 GEL\_CS 1  
 R/W 2 I/O GEL\_D3 GEL\_D4  
 DSP I/O 0x0D000h-0x0D00Fh I/O  
 0x8000 I/O D3 D4



3-2

			JP5	JP4	D1	
EPROM	DATA	8000h	1	1	0	
EPROM	PROG	8000h	0	X	X	
	SRAM	8000h	X	0	X	
			X	1	1	

3-1 0x8000

### 3.7

DES5402PP-U	SRAM	EPROM	SRAM	64K
0x18000h-0x1ffffh(32K)	0x28000h-0x2ffffh	32K	SRAM	32K
0x8000-0xffffh	EPROM	0x8000-0xffffh		
32K	JP5 JP4	0x8000(10 )	D1	
0x8000-0xffffh	3-1			

### 3.8

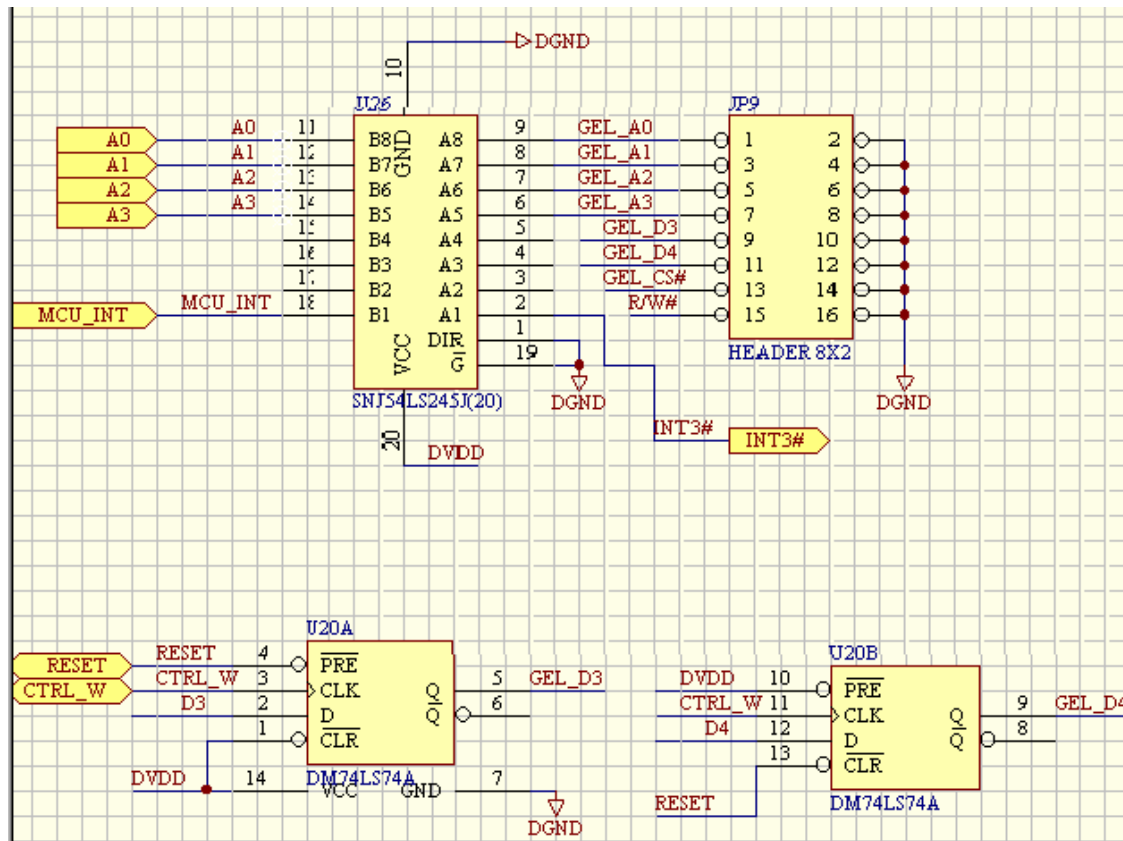
DES5402PP-U

DSP

	0x0e000h	VC5402	I/O	D0	1
0			D0	1	0
			I/O	0x8000	D0
1		0	1	0	

### 3.9

DES5402PP-U	I/O	0x0f000h	D0	D1	D2	D3
			1			



3-3

### 3.10 UART

VC5402	DES5402PP-U	TLC16C550
PC	RS232	DB9
		UART
I NTO		DSP

I O

OB000h ( D7=0);  
( D7=1)  
OB001h ( D7=0); ( D7=1)  
OB002h  
OB003h  
OB004h MODEM  
OB005h  
OB006h MODEM  
OB007h Scratch

TLC16C550 DATASHEET CD-ROM

3. 11

DES5402PP- U 16 LED I O 0x0c000h DO- 15  
16 LED 1 LED 0

3. 12

DSP DES5402PP- U DSP+MCU  
MCU DSP  
8 X 4 128 X 64 8 7  
32 ,

ESC	1	2	3	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
59	51	43	35	27	19	11	03
4	5	6	7				
60	52	44	36	28	20	12	04
8	9	A	B	+	-	×	÷
61	53	45	37	29	21	13	05
C	D	E	F	0	.	=	EXEC



## DES5402PP- U

#### 4.1 DES5402PP- U

JP1 XDS510

JP2	ON	' 5402	MC/MP=0
	OFF	' 5402	<u>MC/MP=1</u>

JP3	ON	' 5402	BIO=0
	OFF	' 5402	BIO=1

JP4	JP5	I/O	8000H	D1	EPROM		RAM
		4-1	1	OFF	0	ON X	

			JP5	JP4	D1	
EPROM	DATA	8000h	1	1	0	
EPROM	PROG	8000h	0	X	X	
	SRAM	8000h	X	0	X	
			X	1	1	

4-1

JP6 ON

OFF

JP7 JP8 JP9

JP10	ON	'	5402	HPI
	OFF	'	5402	HPI

JP11 ON ' 5402 HINT INT2 HPI BOOTLOADER

JP12    ON                  J3                                  J2

JP13 ON ' 5402 MCBSP1 CLKR1 CLKX1

JP14 ON ' 5402 MCBSP1 FSR1 FSX1

JP15 XDS510

JP16 ON J2

JP17

JP18

## 4.2 DES5402PP-U

## I/O

J1 PC DB25  
 J2 AC01 A/D  
 J3 AC01 D/A  
 J5 +5V  
 J6 2 ' C5402 CLKOUT 1  
 J7 1 ' C5402 TOUT0 2  
 J8 1 2 VCC +5V 3 -5V 4 +3.3V  
 J9 J10 1 2  
 J11  
 J12  
 J13  
 J14 1 2 3 4 +5V 5 -5V  
 J15 1 2 3  
 J16 ' C5402 MCBSP 2 2 4 6 8 10 12 1 CLKR1 3  
 FSR1 5 13 DR1 7 CLKX1 9 FSX1 11 DX1 14  
 J17 1 2 3  
 J18 J19 MCU  
 J21 PC RS-232 DB9  
 J22  
 J23 MCU  
 J24 +5 1 2 +5V

### 4.3

' VC5402

0x60-0x3fff		16K	
0x8000-0xffff	EPROM	32K	JP5
0x18000-0x1ffff	SRAM	32K	
0x28000-0x2ffff	SRAM	32K	

' VC5402

0x0-0x5f			
0x60-0x3fff		16K	
0x8000-0xffff	EPROM	32K	JP5 JP4 IO D1
0x8000-0xffff	SRAM	32K	

' VC5402 I/O

0x8000	IO	D0 D1 EPROM SRAM 0x8000 D2 DSP MCU D3 D4 IO
0x9000	MCU DSP	
0x0a000	PC RS-232	8
0x0b000	MCU DSP	8
0x0c000	LED	16 16 LED
0x0d000		
0x0e000		D0
0x0f000		D0 D1 D2 D3